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INFO SHEET

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Vaccination of Cattle Against Respiratory Disease Pathogens in U.S. Feedlots

Bovine respiratory disease complex (BRD) is the leading cause of morbidity and mortality in feedlots. Additionally, many animals develop respiratory tract disease but may not be identified as sick. These animals have decreased average daily gains and poorer carcass characteristics than healthy animals.

Vaccination can be an effective tool in a feedlot's animal health management strategy to decrease the impact of BRD. Other important factors are nutrition, animal handling, facilities, personnel training, and pre-arrival management.

In the fall of 1999, the USDA's National Animal Health Monitoring System (NAHMS) conducted a study of feedlots with 1,000 head or more capacity within the 12 leading cattle feeding states¹. These operations represented 84.9 percent of United States feedlots with 1,000 head or more capacity in 1999 and contained 96.1 percent of the U.S. feedlot cattle inventory on January 1, 2000, on feedlots with 1,000 head or more capacity. Feedlots were grouped into two size categories based on animal capacity (1,000 to 8,000 head and 8,000 head or more head) and by region (Figure 1). Data were weighted to be representative of the feedlot industry in the 12 participating states. Producers were asked about vaccination practices for cattle placed on feed in their feedlot from July 1, 1998, through June 30, 1999.

Nearly all small feedlots (95.7 percent) and all large feedlots vaccinated any cattle with an injectable vaccine for infectious bovine

rhinotracheitis (IBR, Table 1). IBR results from bovine herpesvirus 1 infection. Overall, between 86 and 94 percent of feedlots vaccinated cattle against diseases caused by bovine viral diarrhea virus (BVDV), parainfluenza virus 3 (PI3), and bovine respiratory syncytial virus (BRSV). Feedlots in the Other region were more likely to vaccinate cattle for PI3 than feedlots in the Central region (94.3 compared to 82.6 percent, respectively). Nearly two-thirds (62.1 percent) of feedlots used *Haemophilus somnus* bacterins and over one-half (53.3 percent) of feedlots used *Pasteurella* spp. bacterins. Feedlots in the Other region were more likely to use these bacterins than feedlots in the Central region.

Figure 1

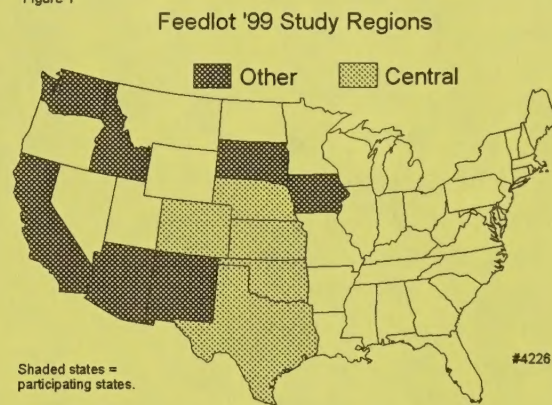


Table 1. Percent of feedlots that gave any cattle the following injectable vaccines by feedlot capacity and by region.

Pathogen	Categorization				
	Feedlot Capacity (Number Head)		Region		All Feedlots
	1,000 - 7,999	8,000 or More	Central	Other	
BVDV	93.5	96.8	94.5	94.2	94.4
IBR	95.7	100.0	97.4	95.7	96.9
PI3	86.2	86.6	82.6	94.3	86.3
BRSV	87.3	87.6	87.0	88.3	87.4
<i>Haemophilus somnus</i>	65.1	54.1	56.9	72.9	62.1
<i>Pasteurella</i> spp.	52.9	54.3	51.0	58.3	53.3

¹ Arizona, California, Colorado, Idaho, Iowa, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Washington

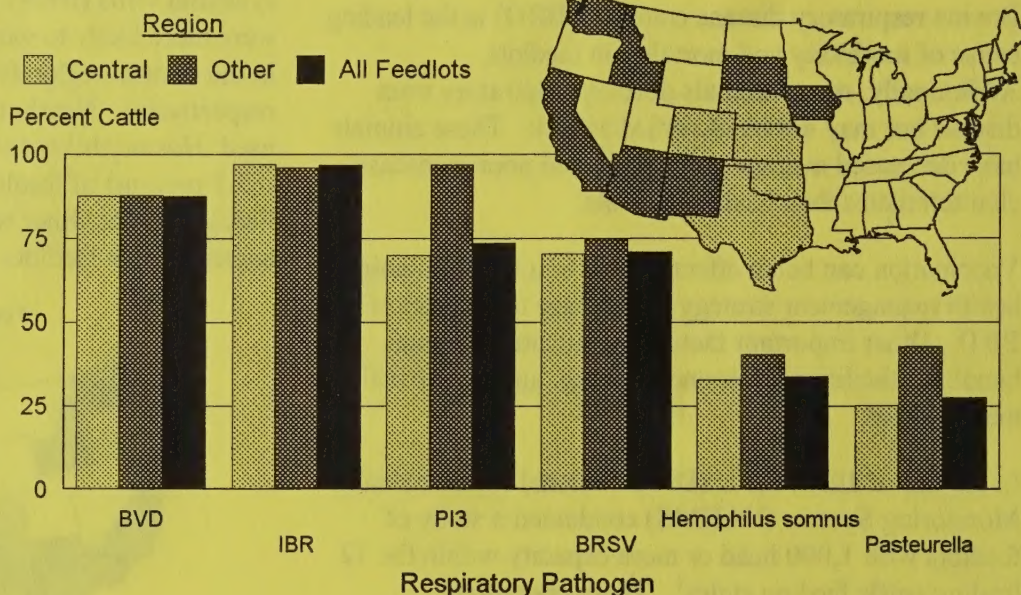
Of all cattle placed on feed, 96.9 percent were vaccinated using an injectable vaccine against IBR (Table 2). More than 87 percent of cattle placed were vaccinated against BVDV. A greater percentage of cattle placed in small feedlots (87.3 percent) than in large feedlots (67.8 percent) were vaccinated against BRSV.

Table 2. Percent of cattle given the following injectable vaccines by feedlot capacity and by region.

Pathogen	Categorization				
	Feedlot Capacity (Number Head)		Region		All Feedlots
	1,000 - 7,999	8,000 or Greater	Central	Other	
BVDV	89.5	87.3	87.7	87.9	87.7
IBR	95.1	97.3	97.1	96.0	96.9
PI3	79.8	72.3	70.0	96.9	73.5
BRSV	87.3	67.8	70.3	74.8	70.9
<i>Haemophilus somnus</i>	49.7	30.7	32.8	40.4	33.8
<i>Pasteurella</i> spp.	34.9	26.1	25.2	42.8	27.5

Figure 2

Percent of Cattle Vaccinated Against Respiratory Pathogens by Region



Cattle placed in feedlots in the Other region were more likely to be vaccinated against PI3, *Pasteurella* spp., and *H. somnus* than cattle placed in the Central region (Figure 2). Overall, approximately one-quarter and one-third of cattle placed were injected with a *H. somnus* or *Pasteurella* spp. bacterin, respectively.

Over one-third (39.0 percent) of feedlots used an intranasal vaccine against IBR. A greater percentage of large feedlots (43.6 percent) than small feedlots (37.2 percent) used these vaccines. Overall, 8.7 percent of cattle placed were vaccinated with an intranasal IBR vaccine. A smaller percentage of cattle placed in large feedlots (7.7 percent) than in small feedlots (14.1 percent) were vaccinated using an intranasal IBR vaccine.

Using either an injectable or intranasal preparation, all cattle placed in large feedlots and 96.6 percent of cattle placed in small feedlots were vaccinated against IBR.

Bovine respiratory disease is the leading cause of morbidity and mortality in feedlot cattle. Vaccination can be a valuable tool to aid in the control of BRD in cattle. The Feedlot '99 study found that most cattle were vaccinated against at least some respiratory pathogens, either using injectable or intranasal vaccines.

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